B600-2/B600G-2

SKOPE Single Door Vertical Chiller

B600-2 (no sign)	G60EV/X5990
B600G-2 (lit sign)	G60EV

B600G-2

User Manual

MAN10530 Rev. 2.5 Dec. 2015

SKOPE® Refrigeration

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1 Installation

Safety First

Always observe safety precautions when using any electrical appliance. Read these instructions carefully and retain them for future reference.

- When the appliance is used by or near young children or infirm persons, close supervision is necessary, especially to ensure children do not play with it.
- Do **not** use this appliance for other than its intended use.
- Do **not** cover the grilles or block the entry or exhaust of airflow by placing objects up against the refrigeration cassette.
- Do **not** probe any opening.
- Do **not** store explosive substances such as aerosol cans with a flammable propellant in this appliance.
- Only use this appliance with the voltage specified on the cabinet rating label affixed to the refrigeration cassette.
- Ensure the chiller has adequate ventilation as this is essential to economical, high performance.
- Be careful not to touch moving parts and hot surfaces.
- For your own safety and that of others, ensure that all electrical work is done by authorised personnel.
- If the power supply flexible cord becomes damaged, it must be replaced by an authorised service agent or similarly qualified person in order to avoid a hazard.
- Ensure all necessary safety precautions are observed during installation or removal of the refrigeration cassette.
- This appliance is not designed to be stable while in motion. Use extreme caution when moving or transporting the appliance.

WARNING

Always isolate the chiller from the mains power supply before attempting any maintenance.

CAUTION

Never overload the power supply, which could damage the chiller and product. See the rating label inside the cabinet for the safe power supply and current draw.

Positioning the Cabinet

Chiller Location

The location of the chiller may be the single most important decision that will extend its life and ensure economical, high performance. We recommend that you put the chiller in the coolest place possible because it will use less power and last longer.

Allow adequate space for doors to open and close properly. Self-closing doors have internal torsion bars pretensioned at the factory, and must be unobstructed. Ensure the cabinet sits on a level surface so that the doors shut and correctly seal. Level footing also prevents the condensate tray from overflowing.

Ventilation

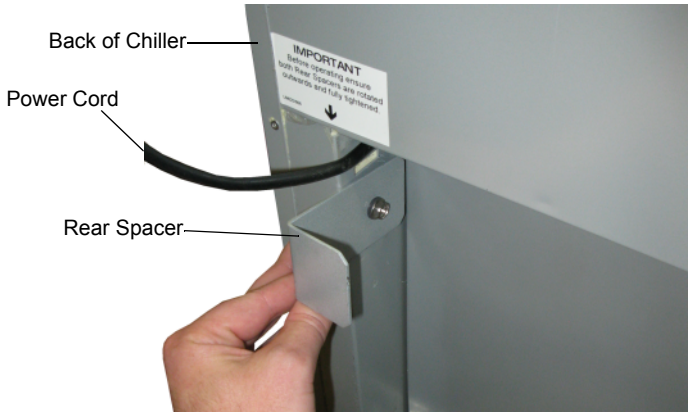
Ensure there is always at least a 50mm gap around the back, top and underside of the cabinet. Keep the ventilation slots in the front panel clear at all times, **never** store cardboard cartons or other objects in front of the chiller.

CAUTION

To prevent over heating and conserve energy, ensure air flows freely all around the chiller - including front, back, top and underside (minimum 50mm gap).

Before Operating

Ensure both rear spacers are rotated outwards and fully tightened. This will provide the necessary air gap at the rear of the cabinet for correct operation.



Power Cord

The chiller has a flexible power cord fitted with a 3-pin plug, which exits the rear of the cabinet at floor level. Pull the power cord around so that it's not trapped before you position the cabinet.

Shelves

The chiller is supplied with four wire shelves and one solid bottom stainless steel shelf.

Bottom Shelf

The solid bottom shelf is fixed into place on the floor of the chiller. It is important that this shelf is always in place as it directs the interior air circulation.

IMPORTANT

For correct chiller operation, the solid bottom shelf must always be in the bottom of the chiller.

Wire Shelves

The wire shelves may be fitted at different heights to suit various products. Each shelf is held in place with four shelf clips, which engage in the shelf support strips. The support strips are numbered for easy location of shelf clips.

To fit the wire shelves

1. Unpack the shelves and shelf clips from inside the cabinet.
2. Establish the desired position for the shelves and securely engage a shelf clip in each of the shelf support strips.
3. Sit the shelves onto the shelf support strips.

2 Operation

Automatic Start-Up

After the cabinet has been positioned in a suitable place, plug it in and check the following activity.

Item	Activity
Condenser Fan	The condenser fan starts when the chiller is plugged in.
Lighting	The lights that illuminate the cabinet interior and top sign (top sign fitted to B600G-2 only) will come on when the chiller is turned on.
Electronic Controller	An electronic controller runs the chiller and is visible behind the front panel. The display panel first flashes start-up messages before stabilising on the cabinet temperature.
Compressor	The compressor starts about three minutes after the lights go on. To verify, listen for the compressor and check that the COMPRESSOR light is green on the EMS Advanced controller. The compressor turns off when the product temperature reaches around +2°C and turns on again when it reaches about +4°C.
Evaporator Fan	The evaporator fan starts about 30 seconds after the compressor. To verify, check that the FAN light is green on the EMS controller.

After initial start-up, the EMS electronic controller starts its self-learning process, and the cabinet will operate without any assistance. Refer to “Self-Learning” on page 8 for more information.

Loading Product

Let the chiller run 30 minutes before loading it with product the first time. When loading the chiller:

- Allow adequate air space around each item to ensure even cooling and efficient operation of the chiller.
- Do not exceed a maximum load of 20kg per shelf.
- Remove some product if the shelves are flexing.
- Do not let anything overhang the shelves because this might stop the doors from shutting or even break something.

EMS Controller Operations

Introduction

The Energy Management System (EMS) controller is located inside the refrigeration unit compartment, with the faceplate visible behind the front panel.

The EMS controller detects variable business hours and switches the chiller to active mode approximately two hours prior to opening, and then changes to stand-by mode at close of business. While in the economical stand-by mode, the temperature inside the chiller is moderated and the cabinet lights turn off.

CAUTION

The EMS controller must only be adjusted by an authorised service agent.

Self-Learning

After initial start-up, the EMS controller goes into learning mode for 24 hours to establish the density of shopper traffic and the business's opening/closing pattern. It's always gathering data about shopping activity and updating itself. A service agent is not required if the store hours change, or you disconnect the power to move the chiller.

The EMS controller continuously collects data from two sources:

- motion sensor
- door switch

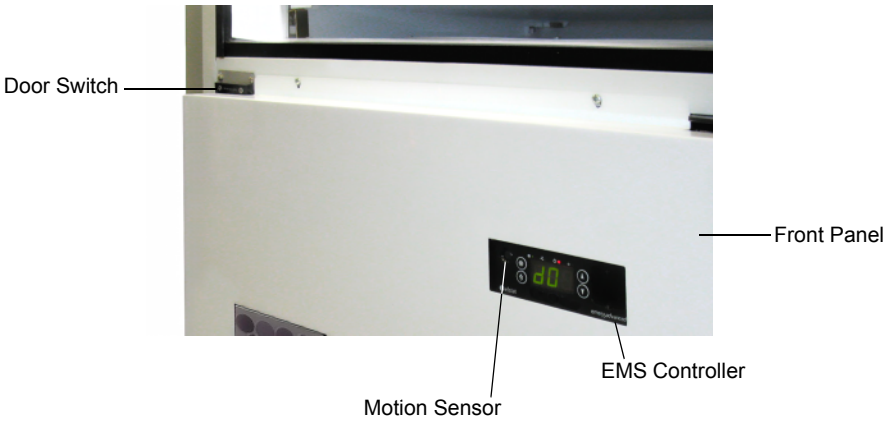
IMPORTANT

Disconnecting the refrigeration unit from the power supply does not reset the self-learning module. Only an authorised service agent can adjust the program.

Motion Sensor & Door Switch

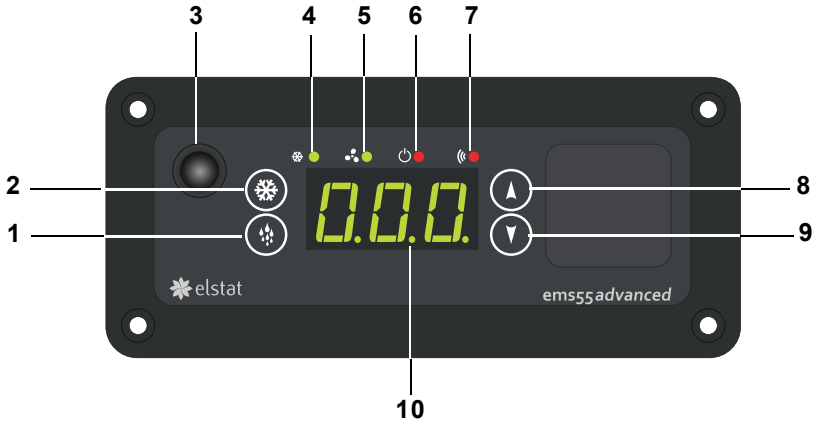
The motion sensor detects activity in front of the chiller and feeds data to the EMS controller. The motion sensor is located on the faceplate of the EMS controller, visible on the front panel.

The chiller is fitted with a door switch below the door. The door switch tells the EMS controller how often the door is opened. A small magnet in the door frame activates the switch.



Faceplate

Because the EMS controller plays such an important role, it's helpful to know the parts of the faceplate you will use.



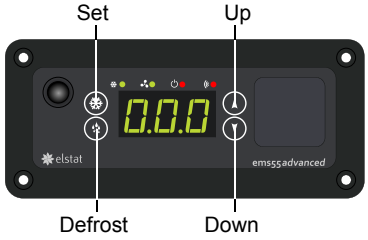
No.	Item	Description
1		**DEFROST** button. Manually activates an additional defrost cycle, and used to program the controller. The first automatic defrost occurs six hours after the first off-cycle.
2		**SET** button. Used to program the controller.
3		Eye of the infrared motion sensor. It detects activity within five metres around the front of the chiller, and feeds the data to the EMS controller.
4		LED for the compressor light – green when on.
5		LED for the evaporator fan – green when on.
6		LED indicating perishable mode – red when on. See page 10 for more information.
7		LED linked to the motion sensor and flashes red when there is activity around the chiller, but otherwise off.
8		**UP** button. Used to program the controller.
9		**DOWN** button. Used to program the controller.
10		Digital display of cabinet temperature or messages (see next page for details). The temperature is what the sensor inside the chiller detects, and not necessarily the product temperature. However, they may be very close depending on how the controller is set to sense temperature. When the chiller is in stand-by mode, the controller displays three bars (- - -). This should not be displayed during normal business hours.

Temperature Setpoint

The chiller temperature setpoint is factory set at 1°C. If necessary the standard setting can be adjusted between 0°C and 4.0°C. SKOPE do not recommend that the setpoint be changed unless it is absolutely necessary, and then only by small increments at a time.

To adjust the setpoint

1. Push and hold the **set** button, **PAS** appears on the display.
2. Release the **set** button.
3. Push the **set** button four times.
4. Push the **up** button once.
5. Push the **down** button twice.
6. Push the **defrost** button twice.



7. Push the **down** button to nagivate to the parameter menu. **PS** will show on the display.

8. Push the **set** button to enter the parameter menu.
9. Push and hold the **set** button to scroll through the parameter menu.
10. Release the set button when **SPC** appears on the display.

11. Push the **up** and **down** button to change the value.
12. Once the desired mode setting is flashing on the display, leave the controller for 20-30 seconds to save the setting.

Perishable Mode

The chiller has the ability to operate in either perishable mode or non-perishable mode. When in perishable mode the symbol on the EMS controller faceplate is lit red, when in non-perishable mode the symbol is not lit.

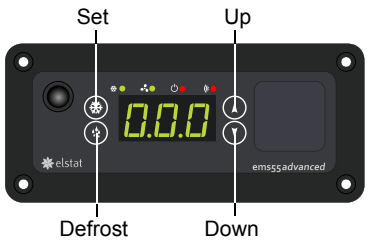
Perishable mode is for use with perishable products such as dairy or food products. When in perishable mode the chiller temperature is kept constantly cool at all times. During standby periods the lights switch off and the fans cycle on and off. Perishable mode must be used when perishable product is being stored inside the chiller.

IMPORTANT
Ensure perishable mode is used when perishable product is being stored inside the chiller.

Non-perishable mode is for use with non-perishable products such as carbonated drinks and water. When in non-perishable mode, the chiller temperature is moderated, the lights switch off and the fans cycle on and off during standby periods resulting in maximum energy savings. Follow the steps below to change between perishable and non-perishable mode.

To change between perishable and non-perishable mode

1. Push and hold the **set** button, **PAS** appears on the display.
2. Release the **set** button.
3. Push the **set** button four times.
4. Push the **up** button once.
5. Push the **down** button twice.
6. Push the **defrost** button twice.



Continued over page

7. Push the **down** button to nagivate to the parameter menu. **PS** will show on the display.

8. Push the **set** button to enter the parameter menu.
9. Push and hold the **set** button to scroll through the parameter menu.
10. Release the set button when **PEr** appears on the display.

11. Push the **down** button to change between perishable and non-perishable mode:

    0 = Non-perishable mode
    1 = Perishable mode

Non-perishable mode

Perishable mode

12. Once the desired mode setting is flashing on the display, leave the controller for 20-30 seconds to save the setting.

Messages and Alarms

The following table explains messages that the EMS Advanced controller displays and related alarms. Alarms signal unexpected operational changes in the chiller and stop when you disconnect the chiller from the power supply at the isolating switch.

Display	Description
	When the chiller is in stand-by mode, the EMS Advanced controller displays three bars. This should not be displayed during normal business hours. When the chiller becomes operational, the display changes to the temperature.
	Defrost cycle in progress.
	Door Open. The EMS Advanced controller detects an open door through a door switch in the door, and has found one open. If it stays open over two minutes, an alarm sounds, but stops when the door closes again. If the door remains open five minutes, such as when loading product, then the alarm stops and the EMS Advanced controller turns off the compressor. The compressor starts again when the door closes.
	High Temperature. The refrigeration system has overheated, and an alarm sounds. The EMS Advanced controller turns off the system to avoid damage. Contact a service agent.
	Probe Failure. A temperature sensor in the cabinet or condenser has failed, and an alarm sounds. Contact a service agent.
	Refrigeration System Failure. There is a refrigeration system failure, and the EMS Advanced controller turns it off to avoid damage. An alarm sounds when the system does not reach the preset temperature within 72 hours.Contact a service agent.
	Supply High. The voltage from the main supply is too high, and an alarm sounds. The controller turns off the electrical motors, continuously monitors the voltage level, and restores power as soon as the voltage returns to a safe level.
	Freeze up protection. The cabinet temperature is too low. The compressor stops running and the evaporator fans run continuously until the cabinet temperature reaches an acceptable level.
	Supply Low. The voltage from the main supply is too low, and an alarm sounds. The controller turns off the electrical motors, continuously monitors the voltage level, and restores power as soon as the voltage returns to an appropriate level.

3 Servicing

Isolating Electrics

You should isolate the cabinet from the power supply before attempting **any** maintenance. Use the isolating switch to turn off electrics to the cabinet and refrigeration unit without unplugging the cabinet from the wall. The isolating switch is located on the right hand side of the refrigeration unit compartment.

To isolate the power supply

1. Fully open the cabinet door and unscrew the front panel.
2. Remove the front panel from the cabinet.
3. Turn off the power to the cabinet (0) at the isolating switch.

Cleaning

Cabinet

Periodically wipe the inside and outside of the cabinet with a damp cloth, taking care to keep moisture away from electrical parts. As with any maintenance, ensure the cabinet is isolated from the power supply before cleaning.

Condenser Coil

To ensure trouble-free performance, we strongly urge monthly cleaning with a soft brush to remove dust and fluff. A more thorough cleaning is recommended every six months, by qualified service personnel. The condenser coil **must** be kept clean for efficient and reliable operation.

WARNING

Isolate the cabinet from the power supply before cleaning the condenser coil.

To clean the condenser coil

1. Remove the front panel and isolate the chiller from the mains power supply (see above).
2. Clean the condenser coil with a soft brush.

3. Reconnect the chiller to the power supply and refit the front panel.

Lighting

This chiller is designed for use with LED tubes and is not compatible with fluorescent tubes.

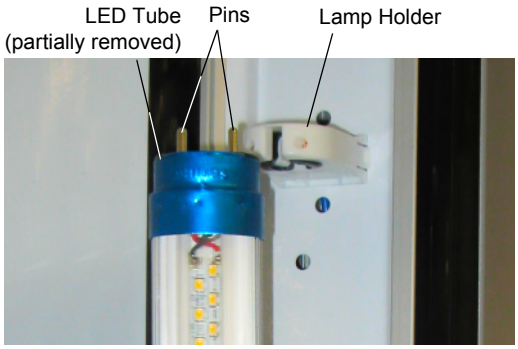
IMPORTANT
DO NOT use fluorescent tubes.

Interior Light

The cabinet interior is lit by one 19 Watt T8 LED tube (Ø26mm x 1200mm), which can be replaced without moving shelves or removing product.

To replace the cabinet interior light

1. Remove the front panel and isolate the chiller from the mains power supply (see previous page).
2. Remove the diffuser by squeezing it until it is released from the aluminium housing, and then push the diffuser out of the way.
3. Rotate the LED tube until the pins on the ends of the tube align with the slots, then slide it out.



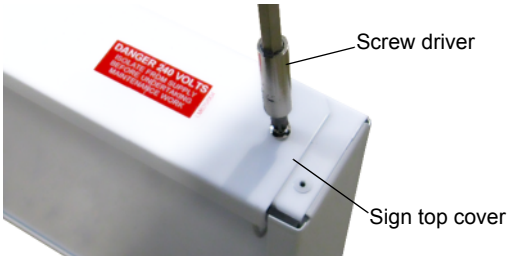
4. Fit a new LED tube.
   Note: the pointer at each end of the tube should be set to the “0” position.
5. Refit the diffuser by slipping the back section into the housing, then squeezing and snapping the front section of the diffuser into place as you work down the length of the light.

Sign Light

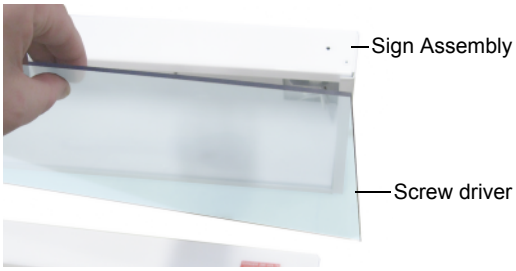
B600G-2 only. The sign unit is lit by one 11 Watt T8 LED tube (Ø26mm x 600mm), which can be replaced by removing the front sign panel.

To replace the sign light

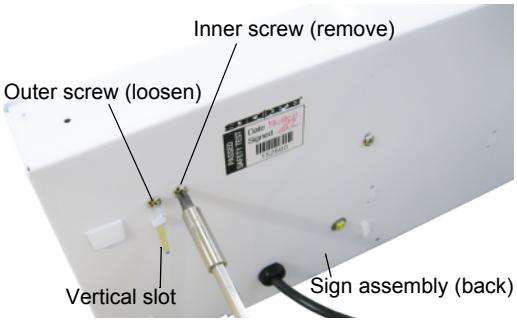
1. Remove the front panel and isolate the chiller from the mains power supply (see page 12).
2. Remove the sign assembly. Lift the assembly up and off the sign sides and unplug it from the cabinet.
3. Remove the sign top cover by undoing the fixing screws from the top of the sign assembly.



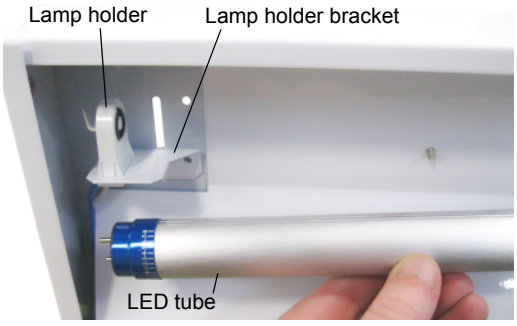
4. Slide the clear front panel (and artwork if present) up and out of the sign assembly.



5. Undo the two inner lampholder fixing screws from the rear of the sign assembly.
6. Loosen the two outside screws (vertical slot screws) and slide the lampholder brackets (and LED tube) to the bottom of the vertical slots.



7. Rotate and remove the failed LED tube.
8. Fit the new LED tube.



9. Slide the lampholder brackets (and LED tube) to the top of the vertical slots and tighten the outside screws (vertical slots screws).
10. Screw the two inner screws back into the assembly to fix the lampholder brackets (and LED tube) in place.
11. Refit the clear front panel (and artwork if present) and screw the sign top cover back onto the top of the sign assembly.
12. Plug the sign assembly back into the cabinet and slot the assembly back onto the sign sides.

Troubleshooting

For questions about the EMS controller, see “Messages and Alarms” on page 11. For problems with the cabinet and refrigeration cassette, use the following table.

Problem	Possible Cause	Suggestions
• Cabinet not operating • No controller display	• Loss of power supply • Isolating switch turned off	• Check mains power supply. • Check isolating switch (see page 12).
• Interior light not on	• Failed LED tube • Controller is in stand-by mode • Blown cabinet fuse	• Replace LED tube (see page 13). • Movement in front of the motion sensor will reactivate it. • Contact an authorised service agent to replace it.
• Power consumption is higher than expected	• Unit operating too hot • Cabinet doors are opened excessively	• Clean the condenser coil (see page 12). • Ensure the cabinet has good ventilation around the refrigeration unit (see page 5). • Ensure the cabinet is in a cool spot. • Ensure doors are closed more often.
• Product is too warm	• Restricted airflow to cabinet • Controller is in stand-by mode • Controller is in non-perishable mode	• Ensure product is not blocking airflow slots. • Ensure there is space around individual product pieces. • Movement in front of the motion sensor will reactivate it. • Change the controller to perishable mode (see page 10).
• Warm cabinet temperatures • Compressor operating for long periods (more than 1 hour)	• Blocked condenser • Poor ventilation around refrigeration unit	• Clean the condenser coil (see page 12). • Ensure the cabinet has good ventilation around the refrigeration unit (see page 5).

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B600-2/B600G-2
SKOPE Single Door Vertical Chiller
Type: G60EV/X5990, G60EV
User Manual

MAN10530
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